

# Organizing Videogame Metadata In CollectiveAccess

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## Abstract

Local institutions need to organize information sets with complex information and attributes. Whether or not open source software has the ability to adequately provide a robust yet easy-to-use system for such institutions is a question raised frequently. To explore that question, a metadata schema created by the GAMER METadata Research Group (GAMER) at the University of Washington was implemented in CollectiveAccess (CA), an open source cataloging software used by many organizations to manage digital collections, as a case study. As an organizational system, CA is appealing because it enables users to create metadata schema with relative ease. However, during implementation, issues emerged related to its potential as a long-term solution, including ease-of-use for both administrators and end-users. This poster explains and expands upon the issues encountered during the implementation process, focusing on how they might be resolved, and what the implications are for designing similar applications in the future.

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## 1 Introduction

CollectiveAccess (CA) is an open-source collection management software intended for use by institutions managing special collections digitally. The software is used by many organizations worldwide to handle their special collections and has seen a great deal of success in organizations large and small. CA is intended to handle metadata schema presentation and search and to do so in an easy-to-understand manner. Due to its past success, CA was selected as a candidate to manage the video game metadata schema (VGMS) created by the GAMER group.

CA was selected based on the praise the software had received from various museums and professionals for its ability to handle digital collections, including Aalberg et al. (2013) and Levay (2014), as well as a high level of granularity being mentioned by the creators as an important feature. Our major research questions included:

- a) Can off-the-shelf applications like CA be successfully used for representing specialized digital cultural heritage collections with complex attributes and relationships?
- b) How can such software be made to be more applicable to specialized digital cultural heritage collections?

These questions are vital to determining whether or not CA could serve as a long-term solution for cataloging specialized collections, and also relevant for designing future digital library/cataloging software. Research questions are addressed in order.

## 2 Study Design and Methods

As a case study, an assessment of how CA handles information was made, following Lee et. al. (2015) for evaluating CA's handling of metadata and relationships, including CA's suitability for the needs of the VGMS outlined by the GAMER group. Norman (2013) and Bates (2011) criteria for design were used for evaluating CA's ease of use, including the reactivity of the software to user inputs and whether or not complex design was appropriately managed via modularization. During CA's evaluation we needed to know:

- a) Whether CA adequately analyzed and managed the special collection schema
- b) Whether CA was consistently modular
- c) Whether CA was highly reactive to user inputs

These were used as criteria for determining how CA handled highly specialized information and whether or not end-users, including specialists and non-specialists, would be able to access the information easily and readily.

### 3 Management

CA made changing an element code or label trivial, and quickly represented the change elsewhere throughout the site. The mirroring of information relating to metadata elements is intuitive and organized, and visually presented in a manner that could be easily explained to another. It can be difficult to modify elements later, as changing information does require the editing of multiple pieces of information. Additionally, with regard to metadata elements, creating linked relationships (e.g. those that apply metadata elements in two different series of information) through the default CA UI is a non-trivial task.

#### 3.1 Relationships

Issues emerge when attempting to recreate conceptual relationships in CA. Even with its faults in this regard, CA is one of the few systems that allows creation and contextualization of relationships at all. Creating relationships in Providence, the backend data processing engine utilized by CA, is difficult to implement due to the manner in which relationships are established in CA. All top-level relationships are established from the outset by CA and cannot be changed or modified without code-level modifications, making it difficult to structure relationships in a manner representing those set out by the GAMER group's CORE standards. Relationships are hierarchically organized and thus do not function with non-hierarchically modeled information. This is a key issue that must be addressed as data is seldom modeled exclusively hierarchically.

#### 3.2 Modularity

Norman (2013) discusses what ease of use affords us and the importance of managing complexity through design. In his discussion, complexity acts as a design constraint, one that can be managed through smart handling and presentation of features. CA provides the user with the ability to access a modular interface and to use high-level, visually easy-to-process features to aid in design and the use of CA. CA only provides these features to higher-level functionalities, while the GAMER schema needed lower-level functionality to link certain relationships semantically. As a result, higher-level functionality was unavailable for these relationships but was required for long-term use of CA to be viable. CA thus provides an incisive look at system constraints by design and how that helps and hinders administrative and end-user functionality.

#### 3.3 Reactivity

Bates (2011) discusses ease of use for users in information retrieval situations as being highly reactive to user needs and issues frequently arose in CA due to a lack of being reactive to user inputs. The lack of reactivity has tended to plague information retrieval systems and frustrate end-users and CA does little to improve this. Unfortunately, CA obfuscates how it is performing searches for end-users and tends to create frustrating situations where even known-item searches are difficult, particularly while using the Pawtucket web-publishing tool, a front-end used to visualize the data processed by Providence.

### 4 Conclusions

Though optimistic about CA's ability to provide solutions to the long-term videogame organization project envisioned by the GAMER group, ease of use issues and the inability to handle certain relationships outlined by the VGMS compromises the deftness with which the system handles metadata. A great deal can be learned from the issues presented here, and perhaps most importantly, is how the lack of linking important metadata relationships hinders information management and how important consistent design is when creating modular systems.

The lack of a system to handle relationships on a relationship to relationship level is ultimately what made CA insufficient for handling the needs of the VGMS and is a major limitation any specialized digital cultural heritage collection will have to contend with when using CA.

To resolve modularity issues, a consistent, modular web-based UI whose primary purpose is making changes to the interface overall would likely be helpful for CA or other organizational database systems moving forward. Some of the best design can be seen in Providence's metadata modification UI, where elements can be freely and easily ordered, added, or removed from Providence's metadata UI display. Such a system could be implemented more widely across more elements of CA to make it more consistent and easier to use, enabling the system to serve a wider organizational audience.

Moving forward, were modularity to become a bigger part of CA in the future and relationship-level linking possible, CA could become a viable candidate for specialized digital cultural collections. Similarly, a more modular CA may additionally resolve issues with the reactivity of inputs faced by users. These however are not minor issues and would require some amount of retooling of CA's design and

programming. The system was ultimately deemed insufficient due to its inability to connect relationships to one another.

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